E/CONF.39/B/56
1 Nov.1962
ORIGINAL : ENGLISH

UNITED NATIONS CONFERENCE
ON THE APPLICATION OF SCIENCE AND TECHNOLOGY
FOR THE BENEFIT OF THE LESS DEVELOPED AREAS

Agenda Item: B.5

United States of America

OCCUPATIONAL SAFETY IN A NEWLY DEVELOPING INDUSTRIAL AREA

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OCCUPATIONAL SAFETY IN A NEWLY DEVELOPING INDUSTRIAL AREA

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1. It would be highly unrealistic to assert, or even to imply that a high level of occupational safety can be achieved quickly in a newly developing economy. True, we have the technical know-how to eliminate almost all physical hazards associated with employment. But we also know from long experience that safety is not simply an engineering problem. Human attitudes and economic factors weigh heavily in the final determination of the success or failure of an occupational safety program. Above all, we know that safety isn't something that can be learned in one lesson or ordered into existence for now and forever by those in authority.

2. True occupational safety is a way of life in which workers, management, and government must all participate. It must be rooted in a sincere respect for the dignity, physical well-being, and economic welfare of the individual. It gains strength and viability from an understanding of the unfavorable social and economic effects which accompany its failure. It reaches fruition only through cooperation and teamwork by all segments of the economy.

3. We in the more highly developed industrial countries have been working toward the elimination of occupational injuries for many years. We have made substantial progress, at times verging on the spectacular, but our goals are high, and we still have a long way to go to reach them. I can speak best, of course, on the developments in my own country, and I want to outline to you the significant steps we have taken over the years. An account of our successes and of our frustrations may help to smooth the way for those nations which are just starting their occupational safety programs.

4. One of the most significant characteristics of our approach to occupational safety is that from the very beginning we have tried to bring into the safety movement all segments of our private economy. We feel strongly that this approach has contributed greatly to our successes and that we have progressed much farther than would have been possible under a strictly government-administered program.

5. As we look back, however, both in our own history and in that of other industrialized countries, it is clear that safety has never been emphasized in the early days of industrialization. In the rush to expand economic activities accidents have been accepted as inevitable, and prodigal waste of human resources has been the rule rather than the exception. Historically, we must face the unpleasant fact that real interest in safety has rarely developed in any economy until after a relatively high level of industrialization has been attained. In the light of our present knowledge of accident prevention it is difficult to understand why this has been true. Certainly it is difficult to understand why it should continue to be true in the newly developing areas. We know full well that we can design safety into any industrial equipment or process; and we know that if workers can be trained for industrial activities, they can be trained to perform these activities safely. If the newly developing countries accept these conclusions and apply them in their early steps toward industrialization, they can avoid many of our mistakes.

6. The safety movement, as we know it today, had its inception in the latter half of the last century. It grew first from a humanitarian concern for the physical suffering and economic plight of the workers who had experienced serious work injuries. Many of these disabled persons were completely dependent upon charity and public support for their meager livelihood. Out of this concern we developed the concept that the economic costs of these disabilities should be borne by the industries which produced them, rather than by the injured persons, their families, and the public. It soon became clear, however, that this could not be achieved satisfactorily through legal actions in which disabled workers sued their employers for damages. This process was too slow, too expensive, and too technical. Recoveries were uncertain and whimsical; and the legal actions took on the aspects of a lottery in which both the disabled worker and the employer gambled for all or nothing. The entire procedure was unsatisfactory, not only to the employer and worker principals, but also to the public.

7. The concept of workmen's compensation envolved directly from this dissatisfaction. The new thought was that the worker should be guaranteed recompense for his economic losses resulting from work injury without being required to prove fault on the part of his employer. The employer, in turn, would be protected from capricious or unreasonable damages by a fixed schedule of benefits. And for practical purposes, the employer's liability for these benefits would be insurable.

8. Laws effectuating these principles were first enacted in Europe, but the concept soon spread to other industrialized areas. The State of Maryland led the way in the United States by enacting a limited workmen's compensation law in 1902. Technical deficiencies, unfortunately, prevented this law from becoming effective. In 1908 the Federal Government introduced workmen's compensation for some of its employees and in 1916 extended the coverage to all Federal employees. In 1911 the first effective State law applying to private employment was enacted. Today, every State in the United States has such a law.

9. As we look back over our experience with workmen's compensation, we realize now that the early concepts as to who should be covered by such laws were much too narrow. The spectacular possibilities of injury arising from contact with the machines used in manufacturing had an undue weight upon the early thinking about work accidents, and many of the laws were written to cover only manufacturing activities. In large measure this was due to the lack of comprehensive statistics to show that work injuries constitute a problem in all industries, not just in manufacturing. Today we have a more precise knowledge of where and how work injuries occur. We know it was a mistake to exclude agriculture and the service trades from workmen's compensation coverage, and we are moving to extend our laws to cover these activities. The newly developing areas might well give consideration to our experience in this respect and possibly avoid repeating our mistake. It probably would be simpler to initiate broad-scale coverage in the beginning than to start with narrow coverage and have to expand later.

10. As we gained experience in the application of workmen's compensation, some of our basic concepts changed. It became evident that the mere provision of immediate medical care and recompense for a portion of the earnings loss of a seriously injured person was not enough. All too often, seriously injured persons were unable to return to regular employment because they lacked the essential skills for any employment other than that for which their injury incapacitated them. These handicapped unemployables were an affront to our concept of human dignity as well as a distinct loss in our pool of manpower. It became clear that the real objective of workmen's compensation should be to insure the return of every possible injured worker to productive employment and economic independence. Our workmen's compensation concepts, therefore, have been extended to include the occupational rehabilitation of every worker whose injury prevents his return to his previous employment. To accomplish this we have to utilize special medical and orthopedic skills to prepare the injured persons for their new activities as well as providing direct occupational training. We have had

excellent success in this, although the program has not moved forward as rapidly as we would like. There has been some reluctance among employers to the hiring of handicapped persons, and some hesitancy on the part of the handicapped persons in accepting rehabilitation. These impediments to the program, however, are being overcome through widespread informational campaigns sponsored by the Federal and State Governments and by private organizations. Now it has been amply demonstrated that physically handicapped persons, when properly placed, are good and effective workers, entirely capable of competing directly with their non-handicapped coworkers. In the light of these findings our "employ the handicapped" programs and our occupational rehabilitation programs include both those who received their disability in industry and those whose disability is not of occupational origin. We are training and finding employment for thousands of such persons each year. Their lives are thereby enriched and made meaningful and the economy is enhanced by their productive abilities.

11. Workmen's compensation, of course, is not the answer to the work-injury problem. At best it is only a palliative after the unfortunate event has occurred. It has, however, an important place in the safety movement, both for its specific purpose of distributing economic loss and as a direct stimulant to accident-prevention efforts.

12. Accident prevention had its inception long before the workmen's compensation concept emerged. In the early 1800's a few enlightened employers, employee groups, and civic-minded individuals began to urge correction of the working conditions which led to the occurrence of injuries in the United States. These private efforts to stimulate interest in safety ultimately led to accident-prevention legislation. In 1867 the State of Massachusetts adopted the first factory inspection law in the United States, and in 1877 adopted a law requiring employers to guard hazardous machinery. Equally important to the safety movement, Massachusetts also established a Bureau of Labor Statistics to study, among other things, the work-accident problem.

13. In 1885 the State of Alabama adopted an Employer's Liability Law and Massachusetts followed suit in 1887. These forerunners to workmen's compensation did not directly impose accident-prevention obligations upon employers, but by making accidents expensive and legally troublesome, they stimulated action to prevent their occurrence. Other States quickly enacted similar liability and factory inspection laws and by 1900 accident-prevention activities were becoming common throughout the United States. The insurance companies writing insurance for employers under the Employer's Liability Laws were particularly active in urging the firms they insured to eliminate hazardous working conditions. Many of them instituted plant inspection services and provided engineering consultation to help their assureds make their operation safe. Plant managements responded by establishing safety programs for their own operations. Early records credit the first of these inplant safety programs to the Joliet Works of the Illinois Steel Company which established a safety department in 1892. This was the real beginning of the American occupational safety movement as we know it today.

14. In 1893 the Federal Government began its active participation. In that year the Bureau of Labor Statistics issued the first of its continuing reports relating to work injuries, a study of European workmen's compensation procedures. This was followed by a series of special reports on workmen's compensation problems and on the hazards associated with particular industrial operations. In 1910 a continuing series of annual injury-rate compilations for the iron and steel industry was inaugurated. In 1925 this injury-rate series was expanded to include 24 industries. At present it covers 260 manufacturing and nonmanufacturing industries. These informational services stimulated a great deal of interest in safety, first by demonstrating the magnitude of the work-injury problem, and second, by showing that real reductions in injury occurrence could be obtained when serious efforts were made to prevent accidents.

15. In subsequent years the Federal Government vastly extended its participation in the occupational safety movement. The Bureau of Labor Standards, in the Department of Labor, has the most widespread functions in this field. As a regulatory agency, it issues and enforces safety regulations for the important maritime industries--stevedoring, ship repair, and harbor work. As a service agency, it assists the States in preparing safety codes and regulations; provides training courses and working materials for State factory inspectors; performs safety research and participates with public and private organizations in developing effective safety standards; and provides technical pamphlets, safety promotional materials, and safety training courses for workers and management personnel. Every two years it conducts, for the President, a national conference to which he invites some 3,000 leaders of safety activities in their own communities to meet with him in a weeklong discussion of occupational safety problems. Within the Federal Government, it acts as coordinator of all safety activities conducted by the various departments and agencies for their own employees. Of particular significance to the newly developing areas, it provides a wide range of technical training in occupational safety for government and industry people from other countries who have expressed an interest in learning the accident prevention methods applied in the United States.

16. The Department of Labor, also, through its Divisions of Wages and Hours and Public Contracts, issues and enforces minimum safety standards in establishments holding Federal contracts; and through its Bureau of Employees' Compensation, provides a workmen's compensation system for workers in the government and the longshore and harbor work industries.

17. The Federal Government also enforces safety rules for the protection of railroad workers through the Interstate Commerce Commission. The Bureau of Mines establishes standards for safety and promotes safety activities in the mining industry, and the Public Health Service conducts research and provides a wide range of consulting services in the field of occupational disease prevention.

18. In the United States, however, the State governments have primary responsibility for the development and enforcement of occupational safety regulations in most industries. Most of the States have some form of regulation, inspection, and enforcement for the more hazardous industries. These procedures vary somewhat from State to State, but through the influence exercised by the various standardization organizations are tending toward uniformity. A number of the States have successfully extended their safety services to include consultation on safe work practices and processes, and to promoting the elimination of physical hazards and unsafe work practices not specifically covered by the regulations.

19. Outside government, a great step forward was taken in 1912 when the Association of Iron and Steel Electrical Engineers sponsored a national meeting of persons interested in discussing the costs, causes, and prevention of accidents. This group met again in 1913 and organized the National Council for Industrial Safety, which in turn became, in 1915, The National Safety Council. Over the years the National Safety Council has expanded its activities to cover all kinds of accident prevention, but it continues to emphasize occupational safety. The council is privately supported by its membership, which includes the great majority of the large employers in the United States. It contributes to the safety movement by distributing information on accident prevention, taking the lead in the development of safety standards, and providing a national center for the exchange of ideas on all phases of safety. It provides special technical consulting services for its members, but much of its effort to promote interest in safety is directed to the general public.

20. As a supplement to the National Safety Council, local safety councils have been organized in most large cities of the United States. These councils engage

in a wide variety of safety campaigns and activities designed to create and maintain general interest in accident prevention. Membership in the councils is open to anyone interested in safety and includes employers, employees, professional people, government people, and representatives of a wide range of civic organizations.

21. Employers' trade associations have been particularly active in the occupational safety movement in the United States. They have consistently assumed the obligation of keeping their members informed of new developments and have provided representation for their industries in the development of safety standards. Many trade associations provide safety engineering consultation for their members and a number conduct safety contests to create and maintain interest in safety throughout their industries.

22. In recent years a number of our labor unions have recognized the desirability of organized labor participation in the safety movement. Some have become joint participants with the employer groups in conducting industrywide safety programs. Many provide safety instruction materials for their members and participate with other organizations in safety research and in the development of safety standards.

23. Two great advances in accident prevention were accomplished when the National Fire Protection Association was organized in 1896 and the American Standards Association was organized in 1918. Prior to the formation of these voluntary privately financed organizations, safety rules and guidelines, and safety legislation as well, varied widely among different industries and among the different States. Both of these organizations moved quickly into the safety field and began to produce safety standards which reflected the best thinking in the country. Because of their excellence, these standards have received wide acceptance throughout the United States. Individual establishments and many whole industries have adopted them as a part of their operating rules, and many of our lawmaking bodies have enacted them into laws or regulations. These are primarily engineering standards relating to the construction and maintenance of safe workplaces, the guarding of hazardous equipment, the elimination of hazardous environmental conditions, and the safe handling of hazardous materials.

24. It has long been recognized in the United States that work-accidents are extremely costly events not only in terms of human resources, but also in terms of material and equipment losses and reduced productive efficiency. A safe plant is usually an efficient establishment with a high standing as a good place to work. Establishments with poor accident records have learned, to their sorrow, that the efficiency of their workers declines after each accident, their competitive position is weakened, their employees are dissatisfied, and it is difficult to persuade the most desirable persons to accept employment with them. Management accepts the concept that safety is good business and not simply a humanitarian activity or an annoying requirement imposed by law or pressure from employee groups. Accident prevention has become an integral part of management and the specialists who administer plant or company safety programs commonly report directly to top management persons.

25. These accident-prevention specialists, who like to call themselves safety engineers, even though many have had no engineering training, take great pride in their profession. For them the achievement of safety is the first objective of any business enterprise. They are true zealots working to improve the lot of their fellow men. To further their efforts they have banded together in a national professional society dedicated to the advancement of safety. Through this organization, The American Society of Safety Engineers, they enhance their own abilities through applied research and the exchange of ideas on accident prevention. Equally important, they act in concert to promote interest and respect for accident prevention in all segments of the population. Largely through their efforts, instruction in safety has become a part of the training offered in most engineering and trade schools. They now have over 7,200 members in their voluntary organization.

26. These widely diverse groups working together in a common cause as the American Occupational Safety Movement have achieved magnificent results. They have carried the message of occupational safety throughout industry and into the homes of our workers. One of the most effective techniques has been to stimulate the interest of each breadwinner's family in his personal safety. Through this family persuasion approach many workers have been convinced that to take a chance is simply foolhardy, and much greater worker acceptance of safety rules and procedures has been achieved. Significantly, it has been found that scare stories presenting the horrors of work injury are generally less effective in creating interest in safety than are reminders of the benefits of remaining uninjured. Equally significant, our occupational safety movement, at the instigation of the management groups, is extending its efforts to include the promotion of "off-the-job" safety. Actually, today in the United States more workers are killed and injured in accidents away from work than while in the course of their employment.

27. The justification for these extensive efforts to achieve occupational safety lies, of course, in the results obtained. Here we have abundant evidence of success. In the steel industry where the first organized safety efforts were established, a group of safety-minded plants reduced their joint work-injury frequency rate from 60.1 disabling injuries in every million employee hours worked in 1913 to 8.2 in 1925. In 1961, our entire iron and steel industry had an injury-frequency rate of only 3.3. This was not just happenstance in an isolated industry. Some 21 of the 138 manufacturing industries for which we have current records had injury-frequency rates of less than 5 disabling injuries per million employee hours worked in 1961. For manufacturing as a whole, the 1961 frequency rate was only 11.0, a tremendous reduction from the level of 20.0 which prevailed only a few years ago in 1943. Many individual establishments have achieved records exceeding 1 million employee hours worked without a single disabling injury to any employee.

28. These statistical records not only prove the worth of the accident prevention movement, but provide the encouragement and stimulus for its continuance and expansion. In this respect injury statistics are essential tools of the safety movement. Without some measure of success or failure, interest in safety would lag and the safety movement would wither. The statistical needs of the safety movement, however, extend far beyond these simple measures of progress. Through statistical analysis of the circumstances and conditions associated with accidents, we can determine the general pattern of accident causes and indicate precisely what kinds of accident-prevention actions are most needed. With this information at hand, those who have responsibility for direct accident prevention can plan their programs effectively and avoid much wasted effort. From such studies we know that we have in the United States reduced machine accidents to a point where our greatest efforts now need to be concentrated upon eliminating slips, falls, and material-handling accidents. These, incidentally, generally result from circumstances which cannot effectively be covered by law or government regulation. They must be brought under control by management and employees working together for a common purpose. Here we feel that management must lead, but without employee cooperation the effort will fail.

29. The most significant elements in our experience for consideration by the newly developing areas in combatting work accidents, therefore, rest on the basic premise that work safety is a matter of interest to everyone. Government certainly must participate by providing leadership and minimum safety requirements. And government probably should assume the function of compiling and distributing the essential statistics.

30. But government cannot do the whole job alone. True progress in safety requires the support and active participation of all sectors of the economy. It must be promoted and encouraged in the home, in the schools, in worker and management groups, and through specialized private organizations. The safety standards we have developed and the methods we have applied in promoting safety are available for the asking. But success in achieving work safety comes only when everyone concerned is convinced that it can be accomplished and that it is worth the effort.

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